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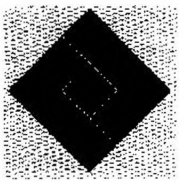

Statement of the European Pressure Ulcer Advisory Panel—Pressure Ulcer Classification

Differentiation Between Pressure Ulcers and Moisture Lesions

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Commentary by Dorothy Doughty

A pressure ulcer is an area of localized damage to the skin and underlying tissue caused by pressure or shear and/or a combination of these.

The identification of pressure damage is an essential and integral part of clinical practice and pressure ulcer research. Pressure ulcer classification is a method of determining the severity of a pressure ulcer and is also used to distinguish pressure ulcers from other skin lesions. A classification system describes a series of numbered grades or stages, each determining a different degree of tissue damage.

The European Pressure Ulcer Advisory Panel (EPUAP) defined 4 different pressure ulcer grades (Table 1).[1]

Nonblanchable erythema is a sign that pressure and shear are causing tissue damage and that preventive measures should be taken without delay to prevent the development of pressure ulcer lesions (Grade 2, 3, or 4).

The diagnosis of the existence of a pressure ulcer is more difficult than one commonly assumes. There is often confusion between a pressure ulcer and a lesion that is caused by the presence of moisture, for example, because of incontinence of urine and/or feces. Differentiation between the two is clinically important, because prevention and treatment strategies differ largely and the consequences of the outcome for the patient are imminently important.

This statement on pressure ulcer classification is limited to the differentiation between pressure ulcers and moisture lesions. Obviously, there are numerous other lesions that might be misclassified as a pressure ulcer (eg, leg ulcer and diabetic foot). Experience has shown that because of their location, moisture lesions are the ones most often misclassified as pressure ulcers.[2-3]

Wound-related characteristics (causes, location, shape, depth, edges, and color), along with patient-related characteristics, are helpful to differentiate between a pressure ulcer and a moisture lesion (Table 2 and Figure 1).

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TABLE 1.

European Pressure Ulcer Advisory Panel Classification[1]

Grade	Short Description	Definition
1	Nonblanchable erythema of intact skin	Nonblanchable erythema of intact skin. Discoloration of the skin, warmth, edema, induration, or hardness may also be used as indicators, particularly on individuals with darker skin.
2	Blister	Partial-thickness skin loss involving epidermis, dermis, or both. The ulcer is superficial and presents clinically as an abrasion or blister.
3	Superficial ulcer	Full-thickness skin loss involving damage to or necrosis of subcutaneous tissue that may extend down to, but not through, underlying fascia.
4	Deep ulcer	Extensive destruction, tissue necrosis, or damage to muscle, bone, or supporting structures with or without full-thickness skin loss.

TABLE 2.

Wound-Related Characteristics

	Pressure Ulcer	Moisture Lesion	Remarks
Causes	Pressure and/or shear must be present.	Moisture must be present (eg, shining wet skin caused by urinary incontinence or diarrhea).	If moisture and pressure/shear are simultaneously present, the lesion could be a pressure ulcer as well as a moisture lesion (combined lesion).
Location	A wound not over a bony prominence is unlikely to be a pressure ulcer.	A moisture lesion may occur over a bony prominence. However, pressure and shear should be excluded as causes and moisture should be present.	It is possible to develop a pressure ulcer where soft tissue is compressed (eg, by a nutrition tube, nasal oxygen tube, or urinary catheter).
		A combination of moisture and friction may cause moisture lesions in skin folds.	Wounds in skin folds of bariatric patients may be caused by a combination of friction, moisture, and pressure.
		A lesion that is limited to the anal cleft only and has a linear shape is not a pressure ulcer and is likely to be a moisture lesion.	Bones may be more prominent where there is significant tissue loss (weight loss).
		Perianal redness/skin irritation is most likely to be a moisture lesion resulting from feces.	
Shape	If the lesion is limited to one spot, it is likely to be a pressure ulcer.	Diffuse different superficial spots are more likely to be moisture lesions.	Irregular wound shapes are often present in a combined lesion (pressure ulcer and moisture lesion).
	Circular wounds or wounds with a regular shape are most likely pressure ulcers; however, the possibility of friction injury has to be excluded.	In a kissing ulcer (copy lesion) at least one of the wounds is most likely caused by moisture (urine, feces, transpiration, or wound exudate).	Friction on the heels may also cause a circular lesion with full-thickness skin loss. The distinction between a friction lesion and a pressure ulcer should be made based on history and observation.

(Continues)

TABLE 2.

Wound-Related Characteristics (*Continued*)

	Pressure Ulcer	Moisture Lesion	Remarks
Depth	Partial-thickness skin loss is present when only the top layer of the skin is damaged (Grade 2). In full-thickness skin loss, all skin layers are damaged (Grade 3 or 4). If there is a full-thickness skin loss and the muscular layer is intact, the lesion is a Grade 3 pressure ulcer. If the muscular layer is not intact, the lesion should be diagnosed as a Grade 4 pressure ulcer.	Moisture lesions are superficial (partial-thickness skin loss). In case where the moisture lesion gets infected, the depth and extent of the lesion can be enlarged/deepened extensively.	An abrasion is caused by friction. If friction is exerted on a moisture lesion, this will result in superficial skin loss in which skin fragments are torn and jagged.
Necrosis	A black necrotic scab on a bony prominence is a pressure ulcer Grade 3 or 4. If there is no or limited muscular mass underlying the necrosis, the lesion is a pressure ulcer Grade 4. Necrosis can also be considered present at the heel when the skin is intact and a black/blue shimmer is visible under the skin (the lesion will most likely evolve into a necrotic eschar)	There is no necrosis in a moisture lesion.	Necrosis starts without a sharp edge but evolves into sharp edges. Necrosis softens up and changes color (eg, blue, brown, yellow, or grey) but is never superficial. Distinction should be made between a black necrotic scab and a dried blood blister.
Edges	If the edges are distinct, the lesion is most likely a pressure ulcer. Wounds with raised and thickened edges are old wounds.	Moisture lesions often have diffuse or irregular edges.	Jagged edges are seen in moisture lesions that have been exposed to friction.
Color	*Red skin:* If redness is nonblanchable, this is most likely a pressure ulcer Grade 1. For people with darkly pigmented skin, persistent redness may manifest as blue or purple. *Red in wound bed:* If there is red tissue in the wound bed, the wound is either a Grade 2, a Grade 3 or a Grade 4 pressure ulcer with granulation tissue in wound bed. *Yellow in wound bed:* Softened necrosis is yellow and not superficial; it is either a Grade 3 or a Grade 4 pressure ulcer. Slough is a creamy, thin and superficial layer; it is a Grade 3 or a Grade 4 pressure ulcer. *Black in wound bed:* Black necrotic tissue in the wound bed indicates a pressure ulcer Grade 3 or 4.	*Red skin:* If the redness is not uniformly distributed, the lesion is likely to be a moisture lesion (exclude pressure and shear as causes). *Pink or white surrounding skin:* Maceration resulting from moisture.	*Red skin:* If the skin (or lesion) is red and dry or red with a white sheen, it could be a fungal infection or intertrigo. This is often observed in the anal cleft. *Green in wound bed:* Infection. Be aware that zinc oxide ointments may result in whitened skin. While eosin is not recommended, it is still used in some areas. It will turn the skin red/brown and obstruct the observation of the skin.

Try to find out the causes of the lesion:

Check the (wound) history in the patient record.

- If the lesion commenced as a large and deep lesion, it is unlikely that it is a moisture lesion.
- If the lesion developed after a long period of pressure and/or shear (eg, surgery, emergency department, radiology), even if the pressure and/or shear are not currently present, it is likely the lesion is a pressure ulcer.

Which measures are taken/what care is provided?

- Superficial linear lesions are often caused by removing sticking plaster and are neither pressure ulcers nor moisture lesions.
- If the pressure ulcer does not improve despite pressure relieving measures and suitable dressings for more than 7 to 10 days, and moisture is present, consider the possibility that the lesion is a moisture lesion.
- If the moisture lesion does not improve despite the use of skin barrier products and incontinence/moisture management for more than 2 days, and pressure and/or shear is present, consider the possibility that the lesion is a pressure ulcer. Exclude the possibility of contact sensitivity (eg, latex allergy). A dermatological consultation is recommended when in doubt about the diagnosis of contact allergy.

What is the skin condition at the different pressure points?

- If a pressure ulcer is present at another pressure point, it is likely this new lesion is also a pressure ulcer.

Check whether the movements, transfers, and position (changes) of the patient may have caused the lesion.

- If the affected area is a pressure point, a pressure ulcer is likely.
- If the affected area is not a pressure point, it is unlikely that the lesion is a pressure ulcer.
- If friction is exerted on a moisture lesion, this will result in superficial skin loss in which skin fragments are torn and jagged.
- Continuous friction causes abrasions.
- If shear deforms the superficial and deeper tissue layers, a pressure ulcer may be the result.
- If a lesion occurs on the heel, check if the lesion was caused by:
  a) pressure and/or shear very likely a pressure ulcer
  b) movement/transfer/shoes very likely a friction lesion/abrasion not pressure ulcer

If a patient is incontinent, consider whether the lesion is a moisture lesion or not.

- If skin barrier products are used in patients who are incontinent, then the chance that a new lesion is a moisture lesion is limited.
- If diapers or incontinence pads are often saturated, consider possibility of a moisture lesion.

Exclude other possible causes.

- Sometimes it can be difficult to differentiate between a moisture lesion and an infection, also characterized by irregular edges and satellite lesions ('islands in front of the coastline'). In these cases, the clinical picture (fever, leukocytosis) should differentiate from moisture lesions.
- Other dermatological conditions should be considered when in doubt about the diagnosis of pressure ulcer or moisture lesion. A dermatological consultation is then recommended.

Additional parameters

Texture of the skin

Dead tissue feels dry/leathery and not pliable.

Temperature of the skin

Compare the temperature of the skin at the pressure point with the temperature of the surrounding skin. This may also be an indicator for detecting Grade 1 pressure ulcer in patients with a darkly pigmented skin.

- If the temperature is higher than that of the surrounding skin, hyperemia is present and the lesion is recent.
- If the temperature is lower than that of the surrounding skin, the blood flow is limited and the lesion is not recent.

Pain

Pain is described in 37% to 87% of the patients with pressure ulcers.[4] Therefore, pain is not a discriminating characteristic for pressure ulcers.

Pain is caused:

a) by irritation of the sensory nerve endings in and around the ulcer;
b) when the wound is debrided;
c) when aids are applied too tightly (eg, tubes, drains);
d) when dressings rub against the surface of the wound;
e) when dressings that stick to the wound surface are removed.

Patients with pressure ulcers experience both acute and chronic pain and describe the sensation as burning, stinging, sharp, stabbing, and tingling.

FIGURE 1. Patient-related characteristics.

■ References

1. European Pressure Ulcer Advisory Panel. Guidelines on treatment of pressure ulcers. *EPUAP Rev.* 1999;1:31-33.
2. Defloor T, De Bacquer DD, Grypdonck MH. The effect of a pressure reducing mattress on turning intervals in geriatric patients at risk of developing pressure ulcers. *Int J Nurs Stud.* 2005;42:37-46.
3. Defloor T, Schoonhoven L. *Interrater and Intrarater Reliability of the EPUAP Pressure Ulcer Classification System.* Paper presented at the 2004 Second World Union of Wound Healing Societies' Meeting, July 8-13, 2004; Paris, France (pp. 56).
4. De Laat HEW, Scholte op Reimer WJM, van Achterberg T. Pressure ulcers: diagnostics and interventions aimed at wound-related complaints: a review of the literature. *J Clin Nurs.* 2005;14:464-472.

■ Commentary by Dorothy Doughty

Dr DeFloor and the EPUAP have produced a thought-provoking statement on differentiation of pressure ulcers and moisture lesions, which coincides with similar issues raised during the recent consensus conference held by the National Pressure Ulcer Advisory Panel (NPUAP). The EPUAP and NPUAP staging systems for pressure ulcers are essentially equivalent; both use depth of breakdown as the basis for wound "stage," and both include partial-thickness (Stage 2) lesions. Both of these systems were developed when our understanding of the pathology of pressure ulceration and other mechanical injuries was limited; it made sense at that time to classify wounds based on depth of tissue injury. As our knowledge base has grown, however, we have realized that our staging system is frequently problematic. One "problem" is that both partial-thickness and full-thickness lesions are labeled as pressure ulcers, although the current evidence suggests that pressure ulcers are full-thickness injuries and that partial-thickness lesions are generally a result of friction and maceration. These are not just semantic issues; as the EPUAP statement notes, accurate determination of causative factors is critical to the effective management of any patient with skin breakdown, because effective management begins with *correction* of the causative factors.

This document reflects the EPUAP's recognition of and response to this problem; it effectively highlights the *importance* of differentiating between pressure ulcers and moisture-related lesions, and it provides helpful guidance to the clinician in conducting a thorough assessment and in accurately interpreting the assessment parameters. As noted, lesions caused by pressure or shear are typically *full-thickness lesions with regular borders,* whereas lesions caused by moisture or friction are typically *partial-thickness lesions with irregular borders.* This document, however, also acknowledges that these distinctions are not always as simple as they sound, because a lesion can be caused by a combination of factors.

The NPUAP has also begun to deal with the many complex issues related to pressure ulcer staging. The recent consensus conference posed numerous questions, including: "Are Stage 2 ulcers actually *pressure* ulcers (are they *caused* by pressure)?" and "Should lesions caused by factors other than pressure and shear be included in the pressure ulcer staging system?" This conference stimulated lively debate, and the WOCN's contributions to this conference will be highlighted in an article in the January 2006 issue the *Journal of Wound, Ostomy, and Continence Nursing.*